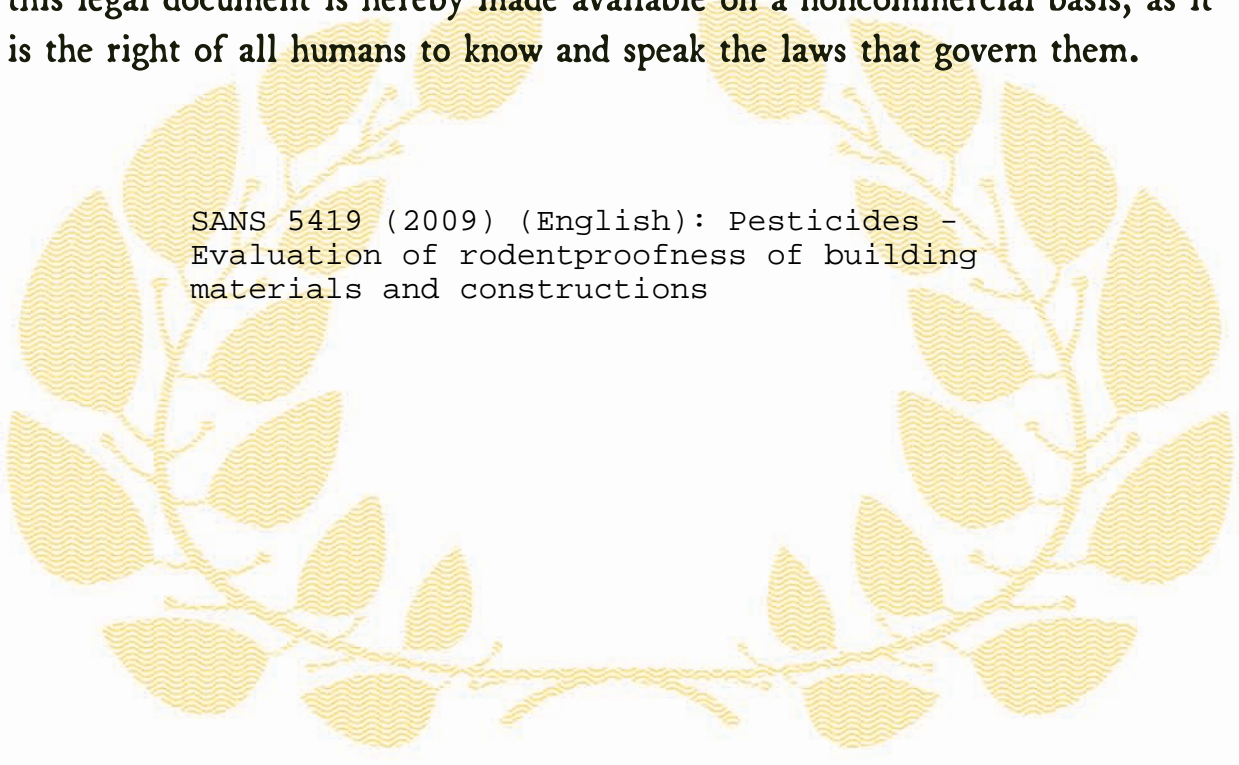




Republic of South Africa

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SANS 5419 (2009) (English): Pesticides -
Evaluation of rodentproofness of building
materials and constructions



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SOUTH AFRICAN NATIONAL STANDARD

Pesticides — Evaluation of rodentproofness of building materials and constructions

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Table of changes

Change No.	Date	Scope

Foreword

This South African standard was approved by National Committee SABS SC 1028F, *Pesticides – Laboratory facilities and rearing and handling of test animals*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was published in February 2009. This document supersedes SABS SM 419:1970 (first revision).

Pesticides — Evaluation of rodentproofness of building materials and constructions

1 Scope

This standard specifies a method for the evaluation of rodentproofness of building materials and constructions.

NOTE In SANS 10080 rodentproof materials and constructions are divided into two classes:

- **class A material or construction** which cannot be penetrated by rodents even when gnawable edges are accessible. It includes a material or construction which is accepted as class A by the Chief Health Officer of the Republic of South Africa, and a material or construction which, after being tested in accordance with this standard, is classified as having an A degree of rodentproofness; and
- **class B material or construction** which, after being tested in accordance with this standard, is classified as having a B₁, B₂, B₃, or B₄ degree of rodentproofness.

2 Test cages

2.1 Test cages for testing building materials (see figure 1)

Semi-detached cages, each 450 mm × 230 mm × 150 mm and constructed of metal and a strong wire mesh of approximate aperture size 15 mm and wire diameter of at least 2,0 mm. The cage has a slit that can be adjusted to fit any test specimen of width not exceeding 75 mm to allow the insertion of the test specimen. The slit is made in such a manner that when the test specimen is in position, this specimen is framed by metal beading 25 mm wide.

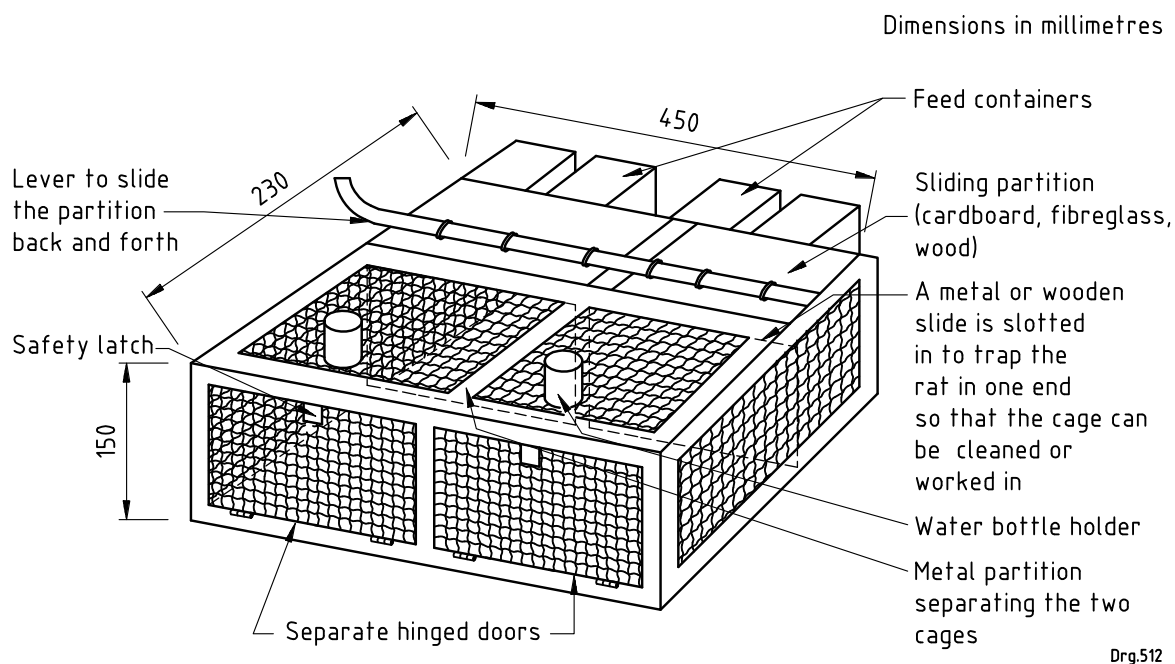


Figure 1 — Rat test cage

2.2 Test cages for testing wall constructions

Ten cages that can be attached to and that will allow the rats access to the whole of the exposed surface of the test unit (see 4.2).

NOTE It may be advantageous in some cases to construct the test units in the form of very small rooms that will act as cages as well as test units.

3 Test animals

Twenty healthy normal adult wild rats of the species *Rattus rattus* Linn., trained as described in clause 7.

4 Test specimens

4.1 Building materials

Twenty specimens, 200 mm wide and 165 mm high, cut at random from the sample to be tested. Ten of the specimens shall have a 25 mm × 10 mm vertical slot in the centre, 50 mm below the top edge.

4.2 Wall constructions

Ten test units (see 2.2) all of which have all the essential features of the construction incorporated.

5 Test conditions

Maintain the laboratory conditions at a temperature of $22\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ and a humidity of $60\% \pm 5\%$. Ensure that the laboratory is quiet and is kept dark during the training and testing periods, except when the barriers are replaced or the test specimens are inspected for damage.

NOTE Undue noise disturbs the rats.

6 Feeding of test animals

Use mice cubes as food and as bait. Supply water to the rats throughout the training and test periods by means of a feeding bottle with a rubber stopper through which a glass tube is inserted.

7 Training of test animals

7.1 Prepare enough cages (see 2.1) by using slotted double-faced corrugated fibreboard barriers to divide each cage into two compartments and putting the bait in one compartment and the water supply in the other. Place a rat in the compartment containing the water supply and leave it in the cage for 2 d, replacing penetrated barriers and renewing the supply of bait when necessary.

7.2 After the initial 2 d training period has elapsed, repeat the procedure in 7.1 but use, firstly, unslotted double-faced corrugated fibreboard barriers, secondly, slotted, and thirdly, unslotted 6,5 mm thick Baltic deal barriers.

7.3 Use for the test only those rats which penetrated all four types of barriers and, for 2 d before starting the test, remove the barriers and feed the rats.

8 Test procedure

8.1 Building materials

8.1.1 Using the 10 slotted test specimens (see clause 4) as barriers, prepare 10 cages in the same way as described in 7.1. Place one rat (in the compartment containing the water supply) in each cage and expose each test specimen to a rat for 72 h. Then remove the test specimens and allow the rats free access to food for 72 h. During this period, using a further 10 cages and the remaining 10 rats, expose the same test specimens to the rats for 72 h. Repeat this procedure for a total exposure period of 432 h, ensuring that each test specimen is exposed to the same team of two rats throughout the duration of the test.

8.1.2 Test the 10 unslotted test specimens (see clause 4) in the same way.

8.2 Wall constructions

Attach a cage (see 2.2) securely to each test unit (see 4.2), place a supply of water (see clause 6) in the cage and place bait on the side of the test unit remote from the cage. Expose each unit, for a total period of 432 h, to 72 h attacks by a team of two rats used alternately. Allow each rat free access to food and water during its "rest" periods.

9 Assessment of rodentproofness

Record, at 24 h intervals, the damage done to each test specimen or test unit, the number of specimens or units penetrated, and the condition of each rat used in the tests. Use these results to determine from table 1 the degree of rodentproofness of the material or construction tested by classifying it in accordance with the lowest value for resistance to penetration obtained.

Table 1 — Degree of rodentproofness

1	2	3
Degree of rodentproofness	Duration of resistance to penetration h	
	Slotted test specimens and test units that have apertures	Unslotted test specimens and test units without apertures
A	432	
B ₁		432
B ₂		288
B ₃		144
B ₄		72 ^a
^a If the duration of resistance to penetration is less than 72 h, the material or construction is classified as not being rodentproof.		

Bibliography

SANS 10080, *The rodentproofing of buildings*.

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